Letter to Editor

We all need to Breathe Clean Air to Keep our Lungs Healthy: It's our Human Right

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Professionals in climate change believe it is the greatest threat to humanity[1]. Climate change is a substantial risk to lung health, directly by promoting or worsening lung diseases, or secondarily by increasing exposure to risk factors for developing pulmonary diseases. Changes in the environment due to climate change increase the amounts of pollen and allergens produced by different plants, promote the proliferation of mould, and increase concentrations of outdoor ozone and particulate matter at ground level[2].

Climate change affects lung health in various ways. The decrease in temperature and increase in humidity make a favorable environment for the transmission of flu. Rapid changes in weather conditions increase the risk of flu epidemics. Floods favor the growth of mould that exacerbates bronchial asthma, sinusitis and allergic rhinitis[3]. The rise in temperature directly or indirectly impacts the lungs. It leads to air pollution, increases exposure to aeroallergens, exacerbates preexisting lung diseases, and increases transmission of respiratory infections[1]. Polluted air, along with increased temperature, exacerbates asthmatic symptoms[3].

The World Health Organization estimates that about 90 percent of people worldwide breathe polluted air. A study conducted in the United Kingdom found that a 1 -degree rise in temperature above 23.2 ^{o}C increases the chances of hospital admission of patients with Chronic Obstructive Pulmonary Disease (COPD) by 1.5% [1].

Children are more vulnerable, especially their respiratory systems, to the effects of climate change. Furthermore, children are exposed to airborne substances such as mould, allergens, air pollutants, and infectious microbes. Moreover, ventilation per unit of body weight of children is higher than that of adults to compensate for the increased production of carbon dioxide gas associated with growth. Hence, the respiratory rate increases in children to eliminate this carbon dioxide. Also, children breathe more often through their mouths, which promotes the deposition of particles in the lungs. Any impairment of respiratory function in childhood consequently affects lung function in adult life; this is a key determinant of chronic respiratory conditions such as COPD[4].

The climate change crisis is predominantly linked to increased temperatures and heat waves in Pakistan; this is expected to increase the likelihood of the occurrence of pulmonary, cardiovascular, and vascular diseases, as well as waterborne illnesses[5]. Pakistan is impacted by global warming. Global warming has increased air pollution by raising temperatures and creating stagnant air. The main urban cities, such as Islamabad, Lahore, and Peshawar, have borne the brunt of air pollution, which exacerbates respiratory conditions such as asthma and COPD[6]. The air pollution data of four core cities, i.e. Karachi, Lahore, Peshawar and Rawalpindi, reported in 2014 were annual mean PM2.5 levels exceeding the WHO guideline value of 10 µg/m3 (Source: Ambient Air Pollution Database, WHO, May 2014). The recent situation is likely worse than before.

The health system in Pakistan needs to be strengthened by building the capacity of the respiratory healthcare workforce, both in terms of quality and quantity, to mitigate the effects of climate change on lung health; this could be part of an overall strategy to address the health-related impacts of climate change.

We hope that we all will have clean air to breathe, keeping our lungs healthy. It's our human right.

REFERENCES

1. Air pollution, climate change, and lung health in Europe. Lancet Respir Med. 2023; 11(10): 851. doi: 10.1016/S2213-2600(23)00345-4.
2. D'Amato G, Cecchi L, D'Amato M, Annesi-Maesano I. Climate change and respiratory diseases. Eur Respir Rev. 2014 Jun; 23(132): 161 -169. doi: 10.1183/09059180.00001714.
3. Climate Changes Respiratory Health. Halean Health Partner. 2025; Available from: https:// www.haleonhealthpartner.com/en-pk/pain-relief/ conditions/care-for-every-breath/climate-change/.
4. Bignier C, Havet L, Brisoux M, Omeiche C, Misra S, Gonsard A et al. Climate change and children's respiratory health. Paediatr Respir Rev. 2025; 53: 64-73. doi: 10.1016/j.prrv.2024.07.002.
5. Riaz K, Ahmad M, Gul S, Malik MHBA, Ur Rehman ME. Climate change and its implications on health and the healthcare system: A perspective from Pakistan. Ann Med Surg (Lond). 2022 Aug 26; 81:104507. doi: 10.1016/ j.amsu.2022.104507.
6. Clean Green Pakistan. GCCISC. 2025; Available from: https://gcisc.org.pk/health/#:~:text=In% 20Pakistan%2C%20major%…enters,%2C% 20bronchitis%2C%20and%20cardiovascular% 20diseases. Accessed on January 28, 2025.

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